WHAT IS CLAIMED IS:

1. A detection probe for an analytical device comprising:

(a) a detection zone for transmitting a signal to the analytical device;

(b) an analyte affinity compound attached to said detection zone, wherein said analyte affinity compound is capable of being activated and deactivated without a significant loss of performance, and when said analyte affinity compound is activated it is capable of increasing the relative concentration of the analyte on said detection zone compare to the concentration of the analyte in the fluid medium when said detection zone is contacted with the fluid medium comprising the analyte.

2. The detection probe of Claim 1, wherein the analytical device is an IR spectrometer.

3. The detection probe of Claim 2, wherein the analytical device is an attenuated total reflection IR spectrometer.

4. The detection probe of Claim 1, wherein said detection probe is an electrochemical sensor probe.

5. The detection probe of Claim 1, wherein said analyte affinity compound is a redox-recyclable compound.

6. The detection probe of Claim 5, wherein said analyte affinity compound is covalently bonded to said detection zone.

7. The detection probe of Claim 6, wherein said analyte affinity compound further comprises a linker that covalently bonds said detection probe to said analyte affinity compound.

8. The detection probe of Claim 5, wherein said analyte affinity compound comprises a lipophilic portion.

9. The detection probe of Claim 5, wherein said analyte affinity compound is ionizable in the fluid medium.

10. The detection probe of Claim 9, wherein at least a portion of counter ion of said analyte affinity compound is exchanged with said analyte in the fluid

medium when said detection probe is contacted with the fluid medium, thereby providing a relatively higher concentration of the analyte proximal to the detection zone compared to the concentration of the analyte in the fluid medium.

11. The detection probe of Claim 5, wherein said analyte affinity compound is an organometallic compound.

12. The detection probe of Claim 11, wherein said analyte affinity compound is selected from the group consisting of 1,1',3,3'-tetrakis(2-methyl-2-hexyl)ferricenium nitrate, 1,1',3,3'-tetrakis(2-methyl-2-hexyl)ferricenium chloride, 1,1',3,3'-tetrakis(2-methyl-2-nonyl)ferricenium nitrate, 1,1',3,3'-tetrakis(2-methyl-2-nonyl)ferricenium chloride, $Ni(DPPP)Cl_2$ and the Eu/styrene MIP.

13. A method for providing a higher concentration of an analyte proximal to a detection zone of a detection probe of an analytical device relative to the concentration of the analyte in a fluid medium in contact with the detection probe, said method comprising attaching a redox-recyclable analyte affinity compound to the detection zone, wherein when said analyte affinity compound is activated it has a higher affinity for the analyte compare to the fluid medium, thereby increasing the analyte concentration proximal to the detection zone relative to the analyte concentration in the fluid medium when said detection zone is contacted with the fluid medium comprising the analyte.

14. The method of Claim 13 further comprising activating the analyte affinity compound prior to contacting the detection zone to the fluid medium.

15. The method of Claim 14, wherein said activation step comprises oxidizing the analyte affinity compound.

16. The method of Claim 15, wherein said oxidizing step comprises electrochemical oxidation, chemical oxidation, or mixtures thereof.

17. The method of Claim 13, wherein the detection probe is an attenuated total reflection infrared spectroscopy probe.

18. The method of Claim 13, wherein the detection probe is an electrochemical sensor probe.

19. The method of Claim 13, wherein the analyte is selected from the group consisting of a perfluoroalkylsulfonate ion, an alkylsulfate ion, a carborane monoanion, tetrafluoroborate, hexafluorophosphate, perchlorate, pertechnetate, perrhenate, cyanide, cyanate, thiocyanate, a monoalkyl ester of deprotonated alkylphosphonic acid, bisulfate, a peptide, an antibiotic, perfluorocarboxylate, nitrite, chlorate, and azide.

20. The method of Claim 13, wherein the analyte affinity compound is selected from the group consisting of 1,1',3,3'-tetrakis(2-methyl-2-hexyl)ferricenium nitrate, 1,1',3,3'-tetrakis(2-methyl-2-hexyl)ferricenium chloride, 1,1',3,3'-tetrakis(2-methyl-2-nonyl)ferricenium nitrate, 1,1',3,3'-tetrakis(2-methyl-2-nonyl)ferricenium chloride, Ni(DPPP)Cl_2 and the Eu/styrene MIP.

21. A method for lowering a detection limit of an analytical device for measuring an analyte in a fluid medium, wherein the analytical device comprises a detection zone, said method comprising attaching an analyte affinity compound capable of being activated and deactivated without a significant loss of performance to the detection zone such that when the detection zone having an activated analyte affinity compound is contacted with a fluid medium, the analyte affinity compound provides a higher analyte concentration proximal to the detection zone relative to the analyte concentration in the fluid medium, thereby increasing the effective concentration of the analyte proximal to the detection zone thus effectively lowering the analyte concentration detection limit of the analytical device.

22. The method of Claim 21, wherein the analyte is selected from the group consisting of a perfluoroalkylsulfonate ion, an alkylsulfate ion, a carborane monoanion, tetrafluoroborate, hexafluorophosphate, perchlorate, pertechnetate, perrhenate, cyanide, cyanate, thiocyanate, a monoalkyl ester of deprotonated alkylphosphonic acid, bisulfate, a peptide, an antibiotic, perfluorocarboxylate, nitrite, chlorate, and azide.

23. The method of Claim 21, wherein the analyte affinity compound is a redox-recyclable compound.

24. The method of Claim 23, wherein the analyte affinity compound is selected from the group consisting of 1,1',3,3'-tetrakis(2-methyl-2-hexyl)ferricenium nitrate, 1,1',3,3'-tetrakis(2-methyl-2-hexyl)ferricenium chloride, 1,1',3,3'-tetrakis(2-

methyl-2-nonyl)ferricenium nitrate, 1,1',3,3'-tetrakis(2-methyl-2-nonyl)ferricenium chloride, Ni(DPPP)Cl_2 and the Eu/styrene MIP.

25. A method for increasing the concentration of an analyte on a detection probe, which is in communication with an analytical device, relative to the concentration of the analyte in a fluid medium, said method comprising:

(a) attaching an analyte affinity compound having a higher affinity for the analyte than the fluid medium on to a surface of the detection probe; and

(b) contacting the detection probe with the fluid medium comprising the analyte.

26. The method of Claim 25, wherein the analytical device is an IR spectrometer.

27. The method for Claim 25, wherein the analyte is selected from the group consisting of a perfluoroalkylsulfonate ion, an alkylsulfate ion, a carborane monoanion, tetrafluoroborate, hexafluorophosphate, perchlorate, pertechnetate, perrhenate, cyanide, cyanate, thiocyanate, a monoalkyl ester of deprotonated alkylphosphonic acid, bisulfate, a peptide, an antibiotic, perfluorocarboxylate, nitrite, chlorate, and azide.

28. The method of Claim 25, wherein the analyte affinity compound is a redox-recyclable compound.

29. The method of Claim 25, wherein the analyte affinity compound is selected from the group consisting of 1,1',3,3'-tetrakis(2-methyl-2-hexyl)ferricenium nitrate, 1,1',3,3'-tetrakis(2-methyl-2-hexyl)ferricenium chloride, 1,1',3,3'-tetrakis(2-methyl-2-nonyl)ferricenium nitrate, 1,1',3,3'-tetrakis(2-methyl-2-nonyl)ferricenium chloride, Ni(DPPP)Cl_2 and the Eu/styrene MIP.

30. A method for detecting an analyte in a solution using an attenuated total reflectance Fourier-transform infrared spectroscopy, said method comprising:

(a) contacting the solution with an ATR-IR detection probe, wherein the ATR-IR detection probe comprises an analyte affinity compound that has a higher affinity for the analyte than the solution;

(b) obtaining an infrared spectroscopy of the solution; and

(c) determining the presence of the analyte.